

REMARKS

Applicants respectfully request reconsideration of the present U.S. Patent application. No claims have been added, amended, or cancelled. Thus, claims 13-16, 19, 20, 22-24 and 26-28 are pending.

REJECTIONS UNDER 35 U.S.C. § 103(a)

Claims 13, 14, and 26 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,652,823 issued to Eto, et al. (*Eto*) in view of U.S. Patent No. 5,337,086 issued to Fujinami (*Fujinami*). For at least the reasons set forth below, Applicants submit that claims 13, 14, and 26 are not rendered obvious in view of *Eto* and *Fujinami*.

The Manual of Patent Examining Procedure ("MPEP"), in § 706.02(j), states:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must be both found in the prior art and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Thus, the MPEP and applicable case law require that a combination of references teach or suggest all of the claim limitations of rejected claims as well as provide motivation for the combination, to sustain an obviousness rejection under 35 U.S.C. § 103.

Claim 14 states:

...a memory coupled to the command stream controller and to the write address generator, the memory to store pixel data in a **first order** determined by the write address generator...

a read address generator coupled to the processing circuitry and to the memory, the read address generator to cause the memory to **output pixel data in**

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a second order, wherein the second order comprises a sub-block-by-sub-block row major order.

(Emphasis added). Claim 20 similarly recites a “memory to store pixel data ... in a first order” and a “read address generator ... to ... cause the memory to output pixel data in sub-block-by-sub-block row major order.” Claim 26 recites “storing pixel data in a memory in a first order” and “reading the pixel data out of the memory in a second order, the second order comprises reading the pixel data sub-block-by-sub-block row major order.” Claim 13 depends from claim 14 and therefore contains all of the limitations of independent claim 14.

Regarding the recited elements of “a write address generator” and “a read address generator,” the Office action directs the Applicants’ attention to column 35, lines 13-30, wherein *Eto* states:

... **video data ... frames** are outputted through the switch 15. The output (see FIG. 15I) of the switch 15 is supplied to the memory 16, and temporarily stored in the memory 16 in response to the **write/read control signal** from the system controller 17. Then, the video data stored in the memory 16 is read out from the memory 16... in response the **write/read control signal** from the system controller 17...

Emphasis added. The Office action argues that the cited passages teach “a write address generator” and “a read address generator.” The Applicants respectfully disagree.

The cited passage merely discloses using a write/read control signal to cause frames of video data to be outputted from a switch to a memory. Neither a “**write address generator**” nor a “**read address generator**” is discussed at all. In fact, Applicants can find nothing in the cited passage that discusses address generation. Therefore, Applicants find nothing in the cited passage that discloses a “write address generator” or a “read address generator,” as recited in claim 14.

The Office action states that *Eto* does not disclose causing “the memory to output pixel data in a second order, wherein the second order comprises a sub-block-by-sub-block row major

order.” Applicants respectfully agree with the Examiner that *Eto* does not disclose the recited element.

Regarding the recited element of causing “the memory to output pixel data in a second order, wherein the second order comprises a sub-block-by-sub-lock **row major order**.” the Office action directs the Applicants’ attention column 4, lines 39-52, wherein *Fujinami* discloses:

Now an explanation of calculator 2 will be given below with regard to the operation. The image data divided into macroblocks and further into subblocks as shown in FIG. 3 are stored in the frame memory 1 block by block. **The data of each subblock thus stored in the frame memory 1 is read out therefrom,** and then the difference between such data and the predictive image data outputted from the motion detector 9 is calculated by the calculator 2. Subsequently this difference data is inputted to the DCT circuit 3 where a discrete cosine transformation is executed. The data outputted from the DCT circuit 3 is supplied to the quantizer 4, and then the quantized data therefrom is supplied to the VLC circuit 5.

Emphasis added. The Office action argues that the cited passage teaches causing “the memory to output pixel data in a second order, wherein the second order comprises a sub-block-by-sub-lock row major order.” The Applicants respectfully disagree.

The cited passage merely discloses that “**each subblock thus stored in the frame memory 1 is read out therefrom,**” without any suggestion that the data is read out in row-major order. Rows of pixels and reading rows of pixels in row-major order is not discussed at all. Therefore, Applicants find nothing in the cited passage of *Fujinami* that discloses causing “the memory to output pixel data in a second order, wherein the second order comprises a sub-block-by-sub-lock row major order,” as recited in claim 14.

As shown above, neither *Eto* nor *Fujinami* teaches or suggests a memory to store pixel data in a first order and read out pixel data from memory in a second order that is sub-block-by-sub-block in row major order as claimed by Applicants. Thus, no combination of *Eto* with

Fujinami teaches or suggests a memory to store pixel data in a first order and read out pixel data from memory in a second order that is sub-block-by-sub-block in row major order. Also, *Eto* fails to disclose "a write address generator" and "a read address generator" as recited by Applicants. For at least the above-stated reasons, Applicants respectfully submit that no combination of *Eto* with *Fujinami* renders claims 13, 14, and 26 obvious.

Dependent claims 15, 16, 27, and 28 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Eto* in view of *Fujinami*, and in further view of U.S. Patent No. 5,892,518 issued to Mizobata et. al. (*Mizobata*). Claims 15 and 16 depend from claim 14. Claims 27 and 28 depend from claim 26. For at least the reasons set forth below, Applicants submit that claims 15, 16, 27, and 28 are not rendered obvious by *Eto*, *Fujinami*, and *Mizobata*.

Mizobata is cited to teach "a setup engine that determines a bounding box for pixels manipulated by the instruction, wherein the bounding box contains all edges of a macroblock and wherein processing circuitry comprises a windower having a first mode wherein pixels inside a triangle within a bounding box are processed and a second mode wherein all pixels within the bounding are processed." Whether or not *Mizobata* discloses the limitations cited by the Office action, it does not teach or suggest a memory to store pixel data in a first order and read out pixel data from memory in a second order that is sub-block-by-sub-block in row major order. Thus, Applicants respectfully submit that no combination of *Eto*, *Fujinami*, and *Mizobata* renders claims 15, 16, 27, and 28 obvious.

Claims 20, 22, and 23 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Eto*, in view of *Fujinami*, and in further view of U.S. Patent No. 6,208,350 B1 issued to Herrera (*Herrera*). Claims 22 and 23 depend from claim 20. For at least the reasons set forth below,

Applicants submit that claims 20, 22, and 23 are not rendered obvious in view of *Eto*, *Fujinami*, and *Herrera*.

Claim 20 recites:

a memory coupled to the command stream controller, the memory to store **pixel data** related to a macroblock in a **first order**, the first order is based on output from an Inverse Discrete Cosine Transform (IDCT) operation...

a read address generator coupled to the memory, the read address generator to cause the memory to **output the pixel data** related to a macroblock in a **second order**, the read address generator to cause the memory to output pixel data in **sub-block-by-sub-block row major order**...

Thus, Applicants claim an apparatus that stores pixel data into a memory in a first order that is based on the output of an IDCT operation and a read address generator that outputs pixel data in a second order that is sub-block-by-sub-block in row major order. As stated above, the MPEP and applicable case law require that a combination of references teach or suggest all of the claim limitations of rejected claims as well as provide motivation for the combination, to sustain an obviousness rejection under 35 U.S.C. § 103.

Herrera is cited as teaching "conventional texture mapping operations and bilinear filterings within motion compensation systems." Whether or not *Herrera* discloses the limitations cited by the Office action, it does not teach or suggest a memory to store pixel data in a first order and read out pixel data from memory in a second order that is sub-block-by-sub-block in row major order. Thus, Applicants respectfully submit that no combination of *Eto*, *Fujinami*, and *Herrera* renders claim 20 obvious.

Applicants further submit that there is no suggestion or motivation to combine *Herrera* with *Eto*. MPEP § 2143.01 states:

Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art.

The teaching or suggestion to make the claimed combination must be found in the prior art, not in Applicants' disclosure. See *In re Vaeck*, 20 USPQ2d 1438 (Fed. Cir. 1991). The Office action does not cite an explicit suggestion or motivation to combine *Herrera* with *Eto* and, therefore, if the suggestion exists, it must be implicit.

Eto discloses an apparatus that performs video encoding and video decoding. See, e.g., FIG. 1 and FIG. 7. *Herrera*, in contrast, discloses a combination of a modified graphics accelerator with software to create a cost effective hybrid solution to providing a personal computer with DVD capabilities. See, e.g., column 4, lines 63-66 and FIG. 8. *Herrera* states:

The second type of solution, places the DVD processing task entirely on the PC's hardware ... providing such specialized circuitry (e.g., a DVD decoder) can be very expensive and result in significantly increased costs, which can be devastating in the highly competitive PC market. The specialized circuitry can also reduce the performance of the PC by requiring access to the PC's bus(es), interfaces and memory components, in some PC architectures.

See column 4, lines 37-46. *Herrera*, therefore, explicitly teaches away from *Eto*, rather than providing an implicit basis to combine the references. Because *Herrera* explicitly teaches away from *Eto*, Applicants respectfully submit that the combination of *Herrera* with *Eto* is improper.

Claims 22 and 23 depend from claim 20. Because dependent claims include the limitations of the claims from which they depend, Applicants submit that claims 22 and 23 are not rendered obvious by *Eto*, *Fujinami*, and *Herrera*.

Claim 24 was rejected under 35 U.S.C. § 103(a) as being unpatentable over *Eto*, in view of *Fujinami*, in view of *Herrera*, and in further view of U.S. Patent No. 5,446,495 issued to Tourtier, et al. (*Tourtier*). For at least the reasons set forth below, Applicants submit that claim 24 is not rendered obvious in view of *Eto*, *Fujinami*, *Herrera*, and *Tourtier*.

Tourtier is cited as teaching "the particular motion compensation pipeline processings and multiple frame prediction operations" claimed by Applicants. Whether or not *Tourtier*

discloses the limitations cited by the Office action, it does not teach or suggest a memory to store pixel data in a first order and read out pixel data from memory in a second order that is sub-block-by-sub-block in row major order. Thus, Applicants respectfully submit that no combination of *Eto*, *Fujinami*, *Herrera*, and *Tourtier* renders claim 24 obvious.

Claims 19 was rejected under 35 U.S.C. § 103(a) as being unpatentable over *Eto*, in view of *Fujinami*, and in further view of *Tourtier*. For at least the reasons set forth below, Applicants submit that claim 19 is not rendered obvious in view of *Eto*, *Fujinami*, and *Tourtier*.

As discussed above, whether or not *Tourtier* discloses the limitations cited by the Office action, it does not teach or suggest a memory to store pixel data in a first order and read out pixel data from memory in a second order that is sub-block-by-sub-block in row major order. Thus, Applicants respectfully submit that no combination of *Eto*, *Fujinami*, and *Tourtier* renders claim 19 obvious.

CONCLUSION

For at least the foregoing reasons, Applicants submit that the rejections have been overcome. Therefore, claims 13-16, 19, 20, 22-24 and 26-28 are in condition for allowance and such action is earnestly solicited. The Examiner is respectfully requested to contact the undersigned by telephone if such contact would further the examination of the present application.

Please charge any shortages and credit any overcharges to our Deposit Account number
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Respectfully submitted,
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